

## REMARKS

Claims 1-30 are pending in the present application. Reconsideration of the application in view of the following comments is respectfully requested.

### **Rejections under 35 U.S.C. § 103**

The Examiner rejected Claims 1-30 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,225,678 (Roy) alone, or in view of U.S. Patent No. 5,965,626 (Tzeng et al.). The Examiner contends that the order of mixing ingredients is *prima facie* obvious. Based on this contention, the Examiner has concluded that, in the absence of a showing of unexpected results, it would have been *prima facie* obvious to arrive at the claimed invention.

### **Unexpected Results**

As discussed in Applicants' previous remarks, the presently claimed invention involves more than simply changing the order of mixing ingredients. Nevertheless, Applicants are providing the attached Declaration of Casey Tzeng in order to provide a showing of unexpected results that would rebut any *prima facie* showing of obviousness. The Declaration compares the results of the asphaltic foam produced by the method of Roy with the foam produced by the method recited in the pending claims. This comparison shows that the presently claimed invention produces unexpectedly superior product compared to the method of the prior art.

The method described in the Roy patent, which involves combining asphalt, polyol and isocyanate in a single reaction at high temperature, produces an asphaltic foam that is not usable because the reaction is too violent, resulting in expansion beyond a mold or partial curing of the foam (Declaration, paragraph 3). When the process of Roy was performed, the resulting foam could not be contained within a mold (Declaration, paragraph 4), and contained stringy asphalt due to partial curing (Declaration, paragraph 5). Thus, the resulting foams could not be used to produce a molded product.

In contrast, when the asphalt/isocyanate and polyol mixtures were separated, then mixed by passing through separate impingement dispensing heads at 125°F, the reaction was controlled and resulted in a foam that could be used to produce a molded product. (Declaration, paragraph 6). This method unexpectedly allows the asphalt/isocyanate and polyol mixtures to be combined at a lower temperature, resulting in a controlled reaction and a foam that can be used to make

molded articles. Thus, the initial separation of these two mixtures, and mixing at lower temperatures, allows the claimed method to work for its intended purpose, namely the production of molded articles such as roofing tiles and ridge caps.

In addition, if the claimed invention were no more than an obvious change in the order of mixing of components as alleged by the Examiner, one of ordinary skill in the art would expect that the same uncontrolled reaction described in Roy would also occur when the asphalt/isocyanate and polyol mixtures were initially separated, then combined as recited in the present claims. However, contrary to conventional wisdom, the reaction was much more controlled and represents a significant, unexpected improvement that would not have been expected based on the teachings of Roy alone, or in view of Tzeng.

### **Long-Felt, Unresolved Need**

Moreover, the Declaration states that the generation of an asphaltic foam suitable for producing molded articles for use in the roofing industry was a real problem that took 20 years to solve (Declaration, paragraph 3). As described in detail in the Declaration, the present method satisfies this long felt but unresolved need by providing a process for generation of an asphaltic foam suitable for producing molded articles for use in the roofing industry. Solving a long felt but unresolved need is one of the secondary considerations in determining obviousness. "Recognition of need, and difficulties encountered by those skilled in the field, are classical indicia of unobviousness." *See, e.g., In re Dow Chemical*, 5 U.S.P.Q. 2d 1529 (Fed. Cir. 1988) and M.P.E.P. 1504.03.

### CONCLUSION

In view of the unexpected results, as well the solution to the long-standing, unresolved need, Applicants respectfully request the Examiner to reconsider and withdraw the rejections under 35 U.S.C. § 103(a). Accordingly, it is respectfully submitted that the present application is fully in condition for allowance, and such action is earnestly solicited. If any minor issues remain which could be resolved by telephone, the Examiner is invited to contact the undersigned at the number provided below.

Respectfully submitted,

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